

1-3, 11-13, 7-9, 17-19

4,978,197 ① ③

1,2,13,5,79

4,493,608

WHAT IS CLAIMED IS

5,461,412

5,627,670 ① A laser beam scanner comprising:

at least two laser light sources for oscillating and emitting at
least two laser beams having different wavelength;
an optical scanning system for scanning the laser beams on a
predetermined scanning plane; and

an optical paths adjusting system for adjusting optical paths of
the optical scanning system, including a position sensor disposed on a
plane optically conjugated with the predetermined scanning plane,
and at least an adjuster for adjusting an optical path of a laser beam
corresponding to the adjuster. ?! ?

② The laser beam scanner in accordance with claim 1,
wherein the optical scanning system includes a ^(1,26) beam splitter for
splitting the laser beams in a first way for introducing the laser beams
toward the scanning plane and a second way for introducing split
laser beams toward the position sensor.

③ The laser beam scanner in accordance with claim 1,
wherein the optical scanning system includes a total reflection mirror
for reflecting the laser beam toward the scanning plane and
withdrawal while the optical paths are adjusted.

④ The laser beam scanner in accordance with claim 1,
wherein the optical paths adjusting system further includes a monitor
display for displaying the positions of the laser beams on the position
sensor.

⑤ The laser beam scanner in accordance with claim 1,

⑤ ⑥ ⑯ ⑯

each of the first, second, and third
5,245,181

wherein the adjuster is a mirror provided in the optical scanning system and manually rotatable around an axis for adjusting a reflection angle of the laser beam.

6. The laser beam scanner in accordance with claim 5, wherein the optical scanning system includes a polygon mirror ^{seal of -} rotating at a constant rotation speed, and the adjuster is disposed between the laser light sources and the polygon mirror.

7. The laser beam scanner in accordance with claim 1, ^{seal of the -} wherein the adjuster is a mirror provided in the optical scanning system and rotated around an axis by an actuator for adjusting a reflection angle of the laser beam.

→ 8. The laser beam scanner in accordance with claim 7, wherein the optical paths adjusting system further includes a ^[5,245,181] processor for calculating a quantity of displacement between the ^[5,018,908] positions of the laser beams on the position sensor, and for controlling the actuator for coinciding the positions of the laser beams by using the calculated quantity of the displacement. 5,627,670

6 ~ 9. The laser beam scanner in accordance with claim 7, wherein the optical scanning system includes a polygon mirror ^{seal of -} rotating at a constant rotation speed, and the adjuster is disposed between the laser light sources and the polygon mirror.

10. The laser beam scanner in accordance with claim 1, wherein the laser light sources respectively emit laser beams having the wavelengths corresponding to three primary colors or complementary colors thereof.

① ~ ⑪ A photographic printer including a laser beam scanner, a conveyor for conveying a photographic paper to a predetermined scanning plane of the laser beam scanner and a developer for developing a latent image exposed on the photographic paper by the laser beam scanner; wherein the laser beam scanner comprising:

- ✓ at least two laser light sources for oscillating and emitting at least two laser beams having different wavelength;
- ✓ an optical scanning system for scanning the laser beams on the predetermined scanning plane; and
- ✓ an optical paths adjusting system for adjusting optical paths of the optical scanning system, including a position sensor disposed on a plane optically conjugated with the predetermined scanning plane, and at least an adjuster for adjusting an optical path of a laser beam corresponding to the adjuster.

2 ~ ⑫ The photographic printer in accordance with claim 11, wherein the optical scanning system includes a beam splitter for splitting the laser beams in a first way for introducing the laser beams toward the scanning plane and a second way for introducing split laser beams toward the position sensor.

3 ~ ⑬ The photographic printer in accordance with claim 11, wherein the optical scanning system includes a total reflection mirror for reflecting the laser beam toward the scanning plane and withdrawal while the optical paths are adjusted.

4 ~ ⑭ The photographic printer in accordance with claim 11, wherein the optical paths adjusting system further includes a monitor

display for displaying the positions of the laser beams on the position sensor.

5 ~ ⑯ The photographic printer in accordance with claim 11,
~~each of k~~
wherein the adjuster is a mirror provided in the optical scanning system and manually rotatable around an axis for adjusting a reflection angle of the laser beam.

6 ~ ⑯ The photographic printer in accordance with claim 15,
wherein the optical scanning system includes a polygon mirror
~~each of~~
rotating at a constant rotation speed, and the adjuster is disposed between the laser light sources and the polygon mirror.

7 ~ ⑯ The photographic printer in accordance with claim 11,
~~each of~~
wherein the adjuster is a mirror provided in the optical scanning system and rotated around an axis by an actuator for adjusting a reflection angle of the laser beam.

8 ~ ⑯ The photographic printer in accordance with claim 17,
wherein the optical paths adjusting system further includes a processor for calculating a quantity of displacement between the positions of the laser beams on the position sensor, and for controlling the actuator for coinciding the positions of the laser beams by using the calculated quantity of the displacement.

9 ~ ⑯ The photographic printer in accordance with claim 17,
wherein the optical scanning system includes a polygon mirror
~~each of~~
rotating at a constant rotation speed, and the adjuster is disposed between the laser light sources and the polygon mirror.

10 ~ ⑯ The photographic printer in accordance with claim 11,

wherein the laser light sources respectively emit laser beams having the wavelengths corresponding to three primary colors or complementary colors thereof.